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# Report of the technical review of the first biennial report of Monaco

Developed country Parties are requested, in accordance with decision 2/CP.17, to submit their first biennial report to the secretariat by 1 January 2014. This report presents the results of the technical review of the first biennial report of Monaco conducted by an expert review team in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention".

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# I. Introduction and summary

## A. Introduction

1. For Monaco, the Convention entered into force on 21 March 1994. Under the Convention, Monaco made a commitment to reduce its greenhouse gas (GHG) emissions by 30 per cent by 2020 below the 1990 level.

2. This report covers the centralized technical review of the first biennial report (BR1)[1] of Monaco, coordinated by the secretariat, in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention" (decision 23/CP.19).

3. The review took place from 5 to 10 May 2014 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Ms. Eglantina Bruci (Albania), Mr. Øyvind Christophersen (Norway), Mr. Sorin Deaconu (Romania), Ms. Agnieszka Maria Janowska (Poland), Mr. Robert Jeszke (Poland), Mr. Bundit Limmeechokchai (Thailand), Ms. Jenny Mager (Chile), Mr. Erick Wamalwa Masafu (Kenya), Mr. Alexander Storch (Austria), Mr. Daniel Tutu Benefoh (Ghana), Mr. Goran Vukmir (Bosnia and Herzegovina) and Mr. Pavel Zámyslický (Czech Republic). Ms. Janowska and Mr. Tutu Benefoh were the lead reviewers. The review was coordinated by Mr. Matthew Dudley and Ms. Barbara Muik (secretariat).

4. During the review, the expert review team (ERT) examined each section of the BR1.

5. In accordance with decision 23/CP.19, a draft version of this report was communicated to the Government of Monaco, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

## B. Summary

6. The ERT conducted a technical review of the information reported in the BR1 of Monaco according to the "UNFCCC biennial reporting guidelines for developed country Parties" (hereinafter referred to as the UNFCCC reporting guidelines on BRs).

7. During the review, Monaco provided further relevant information on assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target.

### 1. Completeness and transparency of reporting

8. Gaps and issues related to the reported information identified by the ERT are presented in table 1 below.

[1] The biennial report submission comprises the text of the report and the common tabular format (CTF) tables. Both the text and the CTF tables have been subject to the technical review.

### 2. Timeliness

9. The BR1 was submitted on 14 April 2014, after the deadline of 1 January 2014 mandated by decision 2/CP.17. The common tabular format (CTF) tables were submitted on 7 April 2014. Monaco informed the secretariat about its difficulties with the timeliness of its BR1 and CTF tables on 18 December 2013 in accordance with decision 23/CP.19, annex, paragraph 65. The ERT noted with great concern the delay in the submission of the BR1 and CTF tables.

10. Monaco submitted a revised BR1 on 7 July 2014. This submission was noted by the ERT, but was not used as the basis of this review.

### 3. Adherence to the reporting guidelines

11. The information reported by Monaco in its BR1 is mostly in adherence to the UNFCCC reporting guidelines on BRs as per decision 2/CP.17 (see table 1). Monaco is a Party not included in Annex II to the Convention (non-Annex II Party) and has thereby voluntarily reported information regarding support provided to developing country Parties.

Table 1

**Summary of completeness and transparency issues of reported information in the first biennial report of Monaco**

| *Sections in the national report* | *Completeness* | *Transparency* | *Reference to paragraphs* |
|---|---|---|---|
| Greenhouse gas emissions and trends | Complete | Transparent | |
| Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target | Complete | Transparent | |
| Progress in achievement of targets | Mostly complete | Transparent | 23 |
| Projections | Complete | Transparent | 27 |
| Provision of support to developing country Parties | NA[a] | NA[a] | |

*Abbreviation:* NA = not available.

[a] A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in the chapter on conclusions and recommendations.

[b] Monaco is a Party not included in Annex II to the Convention and is therefore not obliged to adopt measures and fulfil obligations as defined in Article 4, paragraphs 3, 4 and 5, of the Convention.

## II. Technical review of the reported information

### A. All greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target

12. Monaco has provided a summary of information on GHG emission trends for the period 1990–2011. The ERT noted inconsistencies, particularly regarding CTF table 1 when compared with the 2013 annual GHG submission. Monaco explained during the review that discrepancies mainly arose because of the recalculations made in the Party's response to recommendations arising from the technical review of its 2013 annual submission under the Kyoto Protocol. The ERT encourages Monaco to improve the consistency of data in its next biennial report (BR).

13. Total GHG emissions[1] excluding emissions and removals from land use, land-use change and forestry (LULUCF) decreased by 17.4 per cent between 1990 and 2011, and decreased by the same amount when LULUCF emissions are included. The key drivers for the trend include the reduction in the amount of waste incinerated for energy purposes (a key GHG emission category, comprising 34.7 per cent of the total emissions of Monaco). Other related drivers were thermal energy and fuel regulations in the residential sector, and regulations and improvements in waste disposal in energy facilities. Further information on the review of emission and emission trends is provided in chapter II.A of the report of the technical review of the sixth national communication (FCCC/IDR.NC6).

## B. Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target

14. In its BR1 and CTF table 2, Monaco reported a description of its target, including associated conditions and assumptions. Monaco's target for total GHG emissions is a reduction of 30 per cent below the 1990 level including all key gases and sectors, which corresponds to 75.89 kt carbon dioxide equivalent ($CO_2$ eq) in 2020.

15. The ERT noted that Monaco may need to implement additional measures and/or use market-based mechanisms in order to achieve its target (see para. 19 below). An estimate of the possible scale of contributions from market-based mechanisms was not provided in the BR1. Monaco has reported the notation key for not estimated in CTF table 2(e)II on the use of mechanisms under the Convention. The ERT encourages Monaco to include an estimate of the use of market-based mechanisms to achieve its target under the Convention in its next BR.

16. In its BR1 and CTF table 2, Monaco reported a description of its target, referred to in paragraph 14 above, including associated conditions and assumptions. Monaco includes emissions and removals from the LULUCF sector in defining its quantified economy-wide emission reduction target. In CTF table 2(b), the base year for hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride ($SF_6$) is 1995 and the corresponding base year for nitrogen trifluoride ($NF_3$) is reported as 2000. Monaco has also reported that it uses the global warming potential values from the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (AR4), and that any removals or emissions from LULUCF are calculated using the land-based approach.

## C. Progress made towards the achievement of the quantified economy-wide emission reduction target

17. In its BR1 and CTF tables 3 and 4, Monaco reported information on its mitigation actions implemented and planned since its fifth national communication (NC5) to achieve its target. Monaco also reported on the use of LULUCF to achieve its target. The PaMs reported in the BR1 are consistent with those reported in the NC6.

18. The ERT reviewed the reported information and provided its assessment of the progress made by Monaco towards achieving its target under the Convention. Monaco has implemented measures that target all relevant sectors (energy, industrial processes and waste) and GHGs and the NC6 states that domestic mitigation actions are the priority for

[1] In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of carbon dioxide equivalent excluding land use, land-use change and forestry, unless otherwise specified.

the achievement of Monaco's 2020 emission reduction target. The ERT noted that Monaco's emissions including and excluding LULUCF decreased by 17.4 per cent between 1990 and 2011, and that, in the 'with measures' scenario, the projected emissions are 24.3 per cent below the 1990 level by 2020.

19. The ERT noted the progress made by Monaco. However, based on its projections, Monaco does not seem to be in a position to reach its emission target using existing domestic PaMs only and may need to put in place additional PaMs and/or make use of the market-based mechanisms.

### 1. Mitigation actions and their effects

20. Monaco has provided in its BR1 information on its package of mitigation actions introduced to achieve its target. The BR1 provided information on mitigation actions, which are largely organized by sector and by gas. A detailed review of the reported information is provided in chapter II.B of the IDR/NC6. In CTF table 3, the measures are described and information about the objectives is also provided. The estimated mitigation effects of some PaMs in the energy and transport sectors were quantified.

21. The implemented and adopted PaMs with the highest mitigation effects are in the energy and industrial processes sectors. The mitigation effects of the PaMs reported in CTF table 3 for other sectors are not estimated. Monaco provided information on its Climate and Energy Plan, which has ambitious targets for GHG emission reduction, increasing energy efficiency and controlling energy demand. A detailed review of the reported information on this particular policy is provided in chapter II.B of the IDR/NC6. Table 2 provides a concise summary of the key mitigation actions implemented by Monaco to achieve its target.

22. In most cases, the mitigation effects of the PaMs included in CTF table 3 are reported as not estimated. With a view to improving transparency, and to enable the progress of Monaco towards achieving its target under the Convention to be monitored, the Party is strongly encouraged to enhance its reporting of mitigation effects by providing such information for each measure, or at least for the principal PaMs.

Table 2
**Summary of information on mitigation actions reported by Monaco**

| *Sector affected* | *List of key policies and measures* | *Estimate of mitigation impact (kt $CO_2$ eq)* |
|---|---|---|
| *Policy framework and cross-sectoral measures* | | |
| | Environmental Code | NE |
| | Climate and Energy Plan | NE |
| | Integration of sustainable development clause in the contracts of energy distribution | NE |
| *Energy* | | |
| Energy supply | Optimization tonnages of waste incinerated | 12.90 |
| | Strengthening the central production of heat and cold in Fontvieille and extension of urban distribution | NE |
| Renewable energy | Reclassification of energy plant waste | 1.50 |
| | Development of solar photovoltaic energy | NE |
| | Purchase of renewable electricity | |

| *Sectors affected* | *List of key policies and measures* | *Estimated mitigation impact (kt CO2eq)* |
|---|---|---|
| Energy efficiency | Technical management of public buildings | NE |
| Residential and commercial sectors | Demolition and reconstruction | 0.24 |
| | Thermal regulation RT 2005 | NE |
| | Subsidy for installation of solar thermal systems | NE |
| | Grant for roof insulation | NE |
| | Energy performance contract | NE |
| Transport | Strengthening the rail links in Monaco | NE |
| | Soft mobility | NE |
| | Promotion of the use of bicycles and electric bicycles | NE |
| | Subsidy for purchasing clean vehicles | NE |
| ***Industrial processes*** | EU F-gas directive 2006/40/EC to manage HFC emissions from mobile air-conditioning systems | 4.68 |
| | Manage F-gas emissions from domestic fridges and freezers | 0.02 |
| ***Forestry*** | Tree Code | NE |
| ***Waste management*** | Energy recovery from household and other waste | NE |
| | Disposal of sewage sludge | NE |

*Note:* The greenhouse gas reduction estimates given for some measures are reductions in carbon dioxide or carbon dioxide equivalent for 2020.

*Abbreviations:* EU = European Union, F-gas = fluorinated gas, HFC = hydrofluorocarbon, NE = not estimated.

23. In its BR1, Monaco provided information on its national inventory arrangements and related changes. In the NC6 and during the review, the Party provided information on, for example, changes in institutional arrangements used for domestic compliance and responsibilities for monitoring, evaluation and reporting of PaMs, but this information was not included in the BR1. The ERT recommends that the Party improve completeness by reporting, in its next BR, any changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting and archiving of information and evaluation of the progress made towards its target.

24. Monaco provided, to the extent possible, detailed information on the assessment of the economic and social consequences of response measures.

## 2. Estimates of emission reductions and removals and the use of units from the market-based mechanisms and land use, land-use change and forestry

25. Monaco reported in its BR1 and in CTF table 2(b) that LULUCF is included in its quantified economy-wide emission reduction target, referred to in in paragraph 14 above. Monaco has also reported in its BR1 and in CTF table 4 that it does not intend to use the

market-based mechanisms to meet this target. Table 3 illustrates how Monaco reported on the use of LULUCF to achieve its target.

Table 3

**Summary information on the use of units from market-based mechanisms and land use, land-use change and forestry as part of the reporting on the progress made towards achievement of the target by Monaco**

| Year | *Emissions excluding LULUCF* (kt CO2 eq) | *LULUCF gross-net emissions* (kt CO2 eq) | *Emissions including LULUCF* (kt CO2 eq) | *Use of units from the market-based mechanisms* (kt CO2 eq) |
|---|---|---|---|---|
| 1990 | 107.94 | -0.01 | 107.93 | |
| 2010 | 87.99 | -0.02 | 87.97 | NA |
| 2011 | 85.33 | -0.02 | 85.31 | NA |
| 2012 | NA | NA | NA | NA |

*Abbreviations:* LULUCF = land use, land-use change and forestry, NA = not applicable.

## 3. Projections

26. Monaco has provided in its BR1 and CTF tables 5 and 6 information on its updated projections for 2015, 2020 and 2030 under a 'with measures' scenario. The ERT noted that there is no 'with additional measures' scenario in the BR1 that sets out planned PaMs, and that there is limited information on the methodology used to develop the projections of GHG emissions. A detailed review of the reported information is provided in chapter II.C of the IDR/NC6. The ERT encourages Monaco to include in its next BR submission GHG emission projections under the 'with additional' measures scenario, and information on the methodology used to develop these projections.

27. The ERT noted discrepancies in the reporting of projections data between CTF table 6 and the NC. For instance, the BR1 did not include the total effect of PaMs by gas for 2020 and 2030 and did not include the 'without measures' scenario that were presented in the NC6. The ERT therefore recommends that Monaco include that information in its next BR or make a clear cross-reference to the section of its NC where that information can be found. In addition, the ERT encourages Monaco to improve the consistency of the projections data in its future BRs and NCs.

28. In its BR1, Monaco provided information on the changes since the NC5 in the methodologies used for the preparation of projections. In particular, for the NC6 Monaco has developed and used a 'without measures' and a 'with measures' scenario to provide GHG emission projections for individual key sectors and GHGs, whereas for the NC5 a more simplistic approach was used, whereby the projections were made according to assumptions relating to the success of some key sectoral measures (reference, optimistic and conservative scenarios). However, the ERT noted that the NC6 contained limited information on the methodology used to develop the GHG emission projections, with provided information limited to what 'drivers' were used as a basis to project emissions (e.g. population). A detailed review of the methodology used and an assessment of changes made since the NC5 are provided in chapter II.C of the IDR/NC6.

29. Monaco has reported a 'with measures' scenario, which encompasses all implemented PaMs and also measures taken by the EU and France, as these have a direct effect on the GHG emissions of Monaco. The ERT noted the information reported by Monaco on projected emission trends by 2020 and by 2030. Overall, Monaco's reported projections for 2020 and for 2030 show a decreasing emission trend. In the 'with measures'

scenario, total emissions in 2020 are expected to be at a level that is 24.3 per cent below the 1990 level, and total emissions in 2030 are expected to be at a level that is 31.0 per cent below the 1990 level.

## D. Provision of financial, technological and capacity-building support to developing country Parties

### Provision of financial support to developing country Parties

30. The ERT noted that Monaco is a non-Annex II Party and therefore the provisions of Article 4, paragraphs 3, 4 and 5, of the Convention are not applicable to it. The ERT noted that Monaco reported in its BR1 information on the provision of financial resources and capacity-building support, and commends the Party for providing this information. The ERT assessed this information and its findings are reflected in this report.

31. Monaco reported in its BR1 and CTF tables 7 and 7(a) that, in 2011, it provided financial support of EUR 332,026 through bilateral and regional channels. The corresponding figures for 2012 were EUR 166,540. Bilateral support was provided to Mongolia, Morocco and Tunisia as official development assistance for mitigation and adaptation.

Table 4
**Summary of information on provision of financial support in 2009–2012**
(Euros)

| Direction, channel of public financial support | Core/general | | | | |
|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 |
| Contributions through bilateral and regional channels and others | | | 332 026 | 166 540 | |

## III. Conclusions

32. The ERT conducted a technical review of the information reported in the BR1 and CTF tables of Monaco in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the BR1 and CTF tables provide a good overview of information on emissions and removals related to the quantified economy-wide emission reduction target, a description of the target, progress made by Monaco to achieve its target, and provision of support to developing country Parties.

33. Monaco's emissions and removals related to the target for 2011 were estimated to be 16.7 per cent below its 1990 level excluding and including LULUCF. Emission decreases were driven mainly by changes in the energy sector, particularly in energy use of waste and combustion of heating oil and natural gas. These factors outweighed growing trends in other key non-energy sectors.

34. Under the Convention, Monaco's goal is to achieve a 30 per cent emission reduction compared with the 1990 level. The priority given to Monaco's domestic mitigation actions is highlighted in the NC6. In the case that domestic efforts alone are not sufficient to achieve the target by 2020, Monaco might need to make use of market-based mechanisms. The ERT noted that an estimate of the amount of additional credits that may be required was not provided in the BR1.

35. The description of the quantified economy-wide emission reduction target in the BR1 and CTF tables includes information regarding the base year, gases (carbon dioxide,

methane, nitrous oxide, HFCs, PFCs, $SF_6$ and $NF_3$), sectors covered (energy, transport, industrial processes, agriculture, LULUCF and waste) and global warming potential (GWP) values. In CTF table 2(b), the base year for HFCs, PFCs and $SF_6$ is 1995 and for $NF_3$ the base year is 2000. Monaco has also reported that it uses the GWP values from the AR4, and that any removals or emissions from LULUCF are calculated using the land-based approach.

36. The projected GHG emission levels under the 'with measures' scenario in 2020 and 2030 compared with that in 1990 are 24.3 per cent and 31.0 per cent lower, respectively. The ERT concluded that it is likely that further actions, such as the implementation of additional PaMs and/or the use of market-based mechanisms, be necessary to achieve the target under the Convention.

37. Monaco reported on its PaMs adopted, implemented and planned in achieving its commitments under the Convention. The implemented and adopted PaMs with the highest reported mitigation effects are related to the Climate and Energy Plan, which has ambitious targets for GHG emission reduction, increasing energy efficiency and controlling energy demand.

38. Notwithstanding that Monaco is a non-Annex II Party, the ERT commends Monaco for including in its BR1 information on financial, technological and capacity-building support.

39. In the course of the review, the ERT formulated some recommendations relating to the completeness of Monaco's reporting under the Convention. The key recommendation[1] is that Monaco improve the completeness of its next BR by including information on the following:

(a) Changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting and archiving of information and evaluation of the progress made towards its target;

(b) The total effect of PaMs by gas for 2020 and 2030, or a clear cross-reference to the section of its NC where that information can be found.

[1] The recommendations are given in full in the relevant sections of this report.

# Annex

## Documents and information used during the review

### A. Reference documents

"UNFCCC biennial reporting guidelines for developed country Parties". Annex to decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=4>.

"Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention". Annex to decision 23/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=20>.

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First biennial report of Monaco. Available at <http://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/mco_nc6_brf_french_revised.pdf>.

2013 greenhouse gas inventory submission of Monaco. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/7383.php>.

2014 greenhouse gas inventory submission of Monaco. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php>.

### B. Additional information provided by the Party

Responses to questions during the review were received from Mr. Patrick Roland (Ministry of Public Works, the Environment and Urban Development), including additional material on greenhouse gas projections, the national registry and recent climate policy developments in Monaco.